

We concluded our last Lecture with describing one of the uses to w.^c the wisdom of Antiquity had converted the great Volume of Nature. We told you that the Magi, and other philosophers of ancient times, contrived a system of instruction, w.^c had for its ultimate object the culture of the human heart. The object of this system was to teach something "agreeable to our nature; conducive to our well being, and accommodated to all places & times." This catholic science could be taught only by means that w.^d strikes the universal conceptions of all mankind. It was calculated to o'erleap the artificial boundaries of the geographer; & to pervade every ~~religious~~ nation, sect & religion. To carry this sublime theory into effect, it was needful to cloath abstract truths with a body; and to exhibit the solemn maxims of universal morality in the drapery of allegory. This master science was an application of the works and operations of Nature to a moral sense. Thus did the wisdom of ancient times convert the face of Nature into a glass, or mirror, reflecting the sublimest truths. The whole of this regular system of morality, conceived in a strain of interesting allegory, had for its basis N. history, w.^c accounts for its living through the long

long & dismal night of gothic, arabian & ecclesiastical barbarity, when written codes & systems had expired. — This scheme was assisted by the science of geometry & of numbers. Material & sensible things were explained by the first, and by the latter things intellectual. The method of teaching moral philosophy by numbers has been a secret ever since.

We noticed the destruction committed by the Goths & Vandals. We s^d they issued from the north of Europe, & spreading through the more fertile parts of the south, extinguished the small light of learning that then remained; It is a common practice to condemn & execrate these furious Goths, without any reserve; insomuch that he would be considered as a Goth ^{who} ~~would~~ should, in any degree, defend or extenuate their conduct. It is true, that the cry of the whole learned world has been against them; but we in this quarter of the world, and at this period of it, should examine this portion of human affairs without prejudice, and should take for our motto. "Fiat justitia ruat cælum".

If you read the Annals of Tacitus, or even Gibbons decline & fall of the Roman Empire, you will find that after the death of Cæsar, Licero, Atticus, the two Porci, & Cato Rome was not worth saving. Not only the arts & sciences, but that virtue w^{ch} gives vigour to the mind were in the most languid state. For nearly two centuries no poet or writer had adorned the Roman Empire. Those arts w^{ch} enervate the body & the mind were only attended to, such as cooking & music. During this period the

renowned Romans endured the basest subjection, and suffered tyranny from the weakest, ~~the~~ vilest & most capricious of mortals. Indeed the Southern nations of Europe were sunk into the most contemptible degeneracy & profligacy. On this degenerate race the North poured her brave & hardy sons, who, though ignorant of polite literature, were possessed of many manly virtues.

After a fair & impartial investigation, I believe it will appear that under ^{the conquests of the Goths} their conquests Europe wore a more vigorous & better face; and which however rude, was preferable to that languid, sickly feminine countenance, w^{ch} it had lately worn. However ignorance may talk of the barbarity of the Goths & Vandals, it is to them that England owes her admirable constitution; and of course we our's - w^{ch} constitution says Montesquieu was brought from the woods of Saxony. When we read of vast tracts of country over run by the Greeks & Romans, who made slaves of those they did not destroy, our commiseration is apt to be diminished when we are informed they were only barbarians! The gallant spirit of the heroes of the north will bear comparison with the Romans, who often excite our detestation. The irruption of the Goths was a dreadful scourge to the more polished parts of the world, yet to them modern Europe owes her spirit of liberty, & that vigour of mind w^{ch} led to the true notions of ^{the} political rights of mankind. Theodoric 2. King of the Ostrogoth was a humane & pious prince: he labored to restore literature

Michel's notes to Camoens

We told you that while the Goths were destroying learning in the Western Roman Empire, the Arabians, Saracens or Mahomedans, I call them w. you will, overran the Eastern. We must extend the same justice to these followers of the renowned Mahomed as to the Goths. — At first, they were as great enemies to literature as the Goths themselves; but at length they applied to the study of the sciences, especially History & Medicine. The Abbe Millot mentions it, as one of the most remarkable things in the history of the dark ages, that while the rest of the world was sunk in ignorance, the Arabians were making progress in the sciences. Altho' they destroyed the immense Library at Alexandria, the world is indebted to them for several improvements. They were the first who introduced chemical remedies into medicine; they gave those common figures now used in & in all mercantile transactions, which has contributed not a little to complement that golden chain by w. the merchant ^{binds} the world together. The learning of these Arabians or Saracens was in such high repute when ushered into Europe in the XIth century, that the study of physics, Natural Philosophy and other liberal arts were called "the studies of the Saracens." So much. ∴ by way of extirpating the conduct of the ^{warlike} ferocious, Goths, and equally fierce Saracens. One of the good effects of a liberal education is to help us to think down our prejudices, especially, when it regards the inhabitants of a vast portion of the globe.

Let us now resume the History of Greek & Roman Learning -
In the eleventh century, when literature & the arts began to revive,
the works of the Greeks & Romans were sought with avidity: their
writers were translated & imitated by Petrarch, Boccaccio,
and afterwards by the famous Lorenzo de Medici, and
those whom he patronized. After so many ages of
darkness & stupor, these rays of light, emanating from the
Greek & Roman authors, appeared to men of taste, like
something divine. When learning was thus, first rising on
a barbarous world, ages so long accustomed to darkness, were
too much dazzled with its splendor to see things distinctly.
And now, as one extreme generally produces another, every
thing that was not Greek & Roman, was pronounced
barbarous, & therefore despised. What was the consequence?
- why ^{the} learned, [under w.^c denomination was included only
those who knew how to read the Greek & Roman languages]
- These overwhelmed w.th admiration of the knowledge of the an-
- tients, sat down in despair of ever equalling the power and
knowledge of former times: They rested content; and thought
it sufficient to know what the ancients wrote; but they dar'd
not think differently from them. As to the works of Nature, they
were neglected for the study of words. This remarkable
era is called the Revival of Letters. S.^t Bolingbroke chose to
call it the refurrection of letters.

Soon

Soon after this period there happened a mighty change in the affairs of men. Three seemingly inglorious, mechanic discoveries influenced the world more than any Empire, Sect, or Conqueror ever did: - these were the Mariners compass; the discovery & use of Gunpowder, and the Art of Printing.

For want of the Compass the ancients dwelt in darkness, as it regarded the terraqueous globe: as their knowledge of the habitable world was confined to a small space, so their prejudices were narrow, their notions ridiculous, & their pride excessive. The wise Greeks & Romans, who considered all nations but themselves barbarians, called all the northern nations Scythians, and all the western Celts, indiscriminately. They had no knowledge of Africa beyond Ethiopia; nor of Asia beyond the Ganges: as for this vast continent where we dwell, they never had even a suspicion of its existence: They even pronounced many Zones and climates uninhabitable, where an infinite number of people are now found with all the comforts & luxuries of life. As to the boasted travels of Pythagoras, Democritus, Plato and Anacharsis, it was travelling within their own inclosures compared with those in our days.

The mind of man just emerging from the darkness of ages, and just emancipated from the sloth of ignorance & thralldom of superstition, was able by the means of the compass to cultivate an acquaintance with the more distant families of the earth, & few things operate more powerfully to expand the mind and eradicate prejudices.

Whoever attentively considers the disposition of all things, ^(in the Universe) will find, that the Creator & Legislator of Nature makes use of the smallest means, & causes to operate the greatest & most powerful effects. In His hands a pepper corn is the foundation of the power, glory, & riches of India. He makes an acorn, & by it communicates power, riches & naval dominion to that renowned nation whence we of New England sprang! — Thus also — Some person may have been idly diverting himself with a little red stone, I mean the load stone or magnet, found that it attracted iron; and at length that a needle touch'd with it would always point to the North-pole. Some lucky mortal took this hint of Nature & constructed the mariner's compass, by means of which the sailor traverses the trackless ocean, in the darkest night with perfect safety!

But what shall we say of the Art of Printing, the "ars artium omnium conservatrix." Before the discovery of printing, books were so very scarce; & so costly, as to be in the hands of hardly any but Princes & Bishops; whereas this admirable art has so multiplied them, as to diffuse their copies over the face of the earth. Paintings have been multiplied by the beautiful art of engraving, w^{ch} is the most elegant species of printing. This sort of printing alike unknown to the antients, has contributed greatly to the advancement of almost every art & science. Natural history is particularly indebted to ^{the graphic art} engravings, so is geography, architecture, & we may even add mortality. — How little did the monarchs of Egypt imagine

imagine that a plant, a weed, then growing on the banks of their own Nile, would one day be converted into more durable registers of fame, y^e all the enormous pyramids they could erect! yet you see that the manufactory of this plant into paper, has ensured, by the invention of printing, endless fame to those who vainly sought it by stupendous structures of stone! The verses of Homer, & the works of the most eminent Greek Philosophers have continued several thousand years without loss; - in which time what numberless Palaces, Temples, Castles, Cities, Kingdoms & Empires have been demolished & swept away! 'Tis impossible to preserve the images, or statues of Aristotle, Plato, Cicero, Virgile or Horace; but the images of their minds, their knowledge, remain in books exempt from the injuries of time, & capable, by the admirable art of printing, of perpetual renovation! *

It has been a favorite idea that the art of printing would be an effectual barrier against a second destruction of learning & liberty. But, this must depend on the spirit of the times. In France the press has been the vehicle of every crime. Whether printing shall be a blessing or a curse must depend on the taste of mankind; if that taste be vitiated it will feed on venom, and the more it consumes the sooner it we shall perish. Socrates, Plato and Aristotle taught the people of Athens. Who teaches the common people in this country and in England? The compilers of news-papers; often the lowest and vilest of mankind. The press without morals will not preserve civilization; and immorality will make it a vehicle of

(See Lord Bacon)

Barbarism, when a second darkness & Cimmerian night, equally gloomy with the cloud raised by the crush of the Roman Empire, will succeed - (D^r A. Brown).

Soon after the discovery of the art of printing a very diffusivie and prolix manner of writing grew up among authors. In XVI Cen^y. it was the fashion to print not only all that a man thought, but also all that he found any body else thought; and he was scarcely esteemed a literary man who published any thing less than a folio.

About the year 1530 appeared the voluminous Gesner, and the no less voluminous Aldrovandus with their ponderous folios! It was the object of both these laborious authors to amass every thing that had been written, or said on the various subjects of Nat. History, by Poets, grammarians, Travellers, Philosophers, Physicians & old women. Gesner published thirteen huge volumes in folio. Boerh. calls him "monstrum eruditionis." Buffon makes great use of the labors of Aldrovandus. The books of these writers may be regarded as immense quarries, whence valuable materials may be dug. Aldrovandus ruined his fortune in completing his work, w^h is full of figures of animals, plants, & minerals. He died blind in a hospital; and the indefatigable Gesner shared a still more wretched fate! It is thus the world too often treat those laborious pioneers, who first break ^{rough} the road through an uncultivated region of science, and ^{who} leave to their successors the easy task of smoothing it!

Somewhat anterior to that period, denominated the Revival of Letters, there flourished at Oxford a singularly learned personage named Roger Bacon, commonly called Friar Bacon. The progress w^h this English

English monk made in the arts & sciences, at that dark period, is truly surprizing. This wonderful man, (for his cotemporaries called him D. Mirabilis) was well versed in the theory of perspective optics. He knew the powers of the Telescope. He invented the Magic Lanthorn. He was well versed in astronomy, and was an adept in chemistry, and was actually the inventor of gun-powder, altho he was not the first who applied it to the purposes of war. Bacon was moreover a very able mathematician, logician, metaphysician, & well skilled, for that age, in the medical art. In a word, he was that rare phenomenon, w^{ch} occurs, once perhaps in a few thousand years, a genius; and capable, like Aristotle, of shining in any branch of science, to which he chose to turn his all capacious mind. He lay in prison a number of years for dealing with "the evil spirit," and died at a very advanced age. Well might it be observed, that "this barbarous age was unworthy such a man, who like a single bright star in a dark hemisphere, shewn forth the glory of his country & the pride of human nature!" (Encyc)

Do not however confound this Fryar Bacon, as many do, with Sr Francis Bacon, Lord Chancellor of England, under King James & Queen Elizabeth, who was justly called the prophet of the Sciences, w^{ch} Newton afterwards revealed. As we shall speak of Lord Bacon again & again in the course of our lectures, we shall only observe now, that he was the great reformer of Philosophy. This is he of whom Addison s^{ays} that "he possessed the sound, distinct, comprehensive knowledge of Aristotle, with all the beautiful light graces of Cicero." His talents, his learning & his labours, will be ad

admired as long as the Latin & English language endureth.

Between 1470, and 1500 a great part of the globe was discovered w.^{ch} was totally unknown to the ancients; as this Continent of America, the Southern parts of Africa, China, Cochin China & Siberia, together with a vast number of Islands in the Atlantic Ocean.

At this period [and the coincidence of events is remarkable] the celebrated Reformer Martin Luther strip'd off the covering w.^{ch} had long concealed the vice, superstition & nonsense of the then Romish-Church. It is not only worthy your notice now, but of reiterated consideration, that at the very time when the bounds of the material world were enlarged to mankind by these discoveries, the view of the intellectual world was equally enlarged by Luther & other reformers. Thus, when men were persecuted for their religious & philosophic opinions, this new world America offered itself to view, as a safe asylum for the oppressed to fly to. No sooner were the clouds & darkness dissipated from the minds of men by the Reformation ^{the fermenting era of experiment.} than there followed, Galileo [tho' persecuted] introduced his mathematical reasoning; & Lord Bacon his new mode of induction. A spirit of generous emulation at length broke forth, and Anatomists, Chemists, Naturalists & Physicians, throughout Europe, examined bodies with more attention and juster views. About this time Telescopes & Microscopes began first to be used: the former opened (as it were) a nearer commerce with the heavenly bodies, & confirming the ancient system of Pythagoras, w.^{ch} he learnt from the Egyptians.

Our forefathers did not fly from popish but protestant persecution

Unless you attend to the history of former times, & bear in mind the genealogy of the Sciences, you will not have a just idea of the advantages you enjoy at this period of the world. Our common people compared with those of 500 years ago, by possessing the faculty of reading & writing may be said to enjoy a sixth sense.

After the two gigantic authors we mentioned Aldrovandus and Gesner came Prondelatus, Belon & Wotton, & several writers of the same class; Then came Johnson ^{whose} ~~was~~ work is enriched with some very good engravings. In 1551. the first book on Botany printed in England was by Turner. [This is it] It was then considered the chief Louvre, or perfection of printing & engraving. - These writers translated & transcribed, but added nothing to the stock of knowledge.

This race of phlegmatic writers was succeeded by Ray Willowby and the very accurate Grew; they changed the dress of N.H. and decked her out in ~~her~~ a more charming attire. Grew who flourished about 100 years ago, gave the anatomy of a plant in so satisfactory manner, that his book is the best on that subject now extant. Nor were the French behind the English. Meaumur, Trembley, & Buffon were distinguished in that nation; so was Bonnet at Geneva & Spallanzani in Italy - Above them all towers that Prince of Naturalists Linnaeus of Sweden, of whom we shall speak hereafter. After his death there followed a swarm of writers on Natural History, too numerous for us to mention.

Recapitulation.

Having conducted you through a long & winding way; from the theories of the ancient fathers of philosophy in Greece, down to the Romans; and from the Romans, through the dark & dismal night of Arabian, Gothic, Arabian and ecclesiastical barbarity—let us now cast a glance back on the space we have left behind—
— We shall find on the review, that the diffusion of benevolence has kept exact pace with the extension of true philosophy. When Philosophy was banished the earth, cruelty & injustice took her place: when she returned, peace, Liberty & happiness followed in her train—

It is not easy to find a subject of more interesting instruction, or more valuable entertainment, than that of marking the gradual progress of the arts & Sciences. 'Tis pleasant to trace the rise and ~~progress~~ struggling progress of intellectual light, from its humble task, in measuring a field, as in Egypt, [w. gave rise to geometry] to its guiding Commerce over the pathless deep, and thereby diffusing science & humanity around the globe; or, ~~penetrating~~ piercing wth Galileo the expanse of heaven; or calculating wth Newton the revolutions of its planets; or unvailing wth Franklin nature's simple & majestic laws. — A thoughtful mind is naturally led into reflections on the different degrees of human knowledge, in various ages of the world; on its proportion to our own; and its influence on social life, and public happiness.

'Tis very common

'Tis very common to praise ancient times & condemn our own; yet, if we cast our eyes back on the history of mankind, the view will shock us! Of the six & twenty centuries, wherein the memory and learning of mankind have been exercised, scarcely one can be called out, as fertile in the sciences, or favourable to humanity! On a modest computation, the destruction of the human race, in building up tyranny by Sesostris, Semiramis, by Terxes, by Alexander; the Romans, the Sicilians, by Mithridates, the Goths & Vandals & Crusaders, and by the Spaniards in Mexico & Peru; and during the French revolution, and since by Bonaparte, amount to 45 times the number of mankind now on the face of the earth!

The Roman name strikes us with such veneration, that we are apt to include humanity among their virtues; but the most boasted virtue of the most renowned Roman would pass without much eulogium in this day. The truth is, says Millot their natural roughness of temper, their adoration of Victoria, that deity so dear to the Romans, made them neglect & trample on their fellow men, whom if denominated barbarians they scarcely distinguished from brutes. And when the glory, greatness, strength & learning of that famous people were extinguished; and when their Empire was finally overturned, the cause of humanity was still less regarded; and it was worse, when a northern swarm of barbarians, spread through Italy & extinguish'd the small light of learning which then remained.

And when Mahomet & his successors carried their victories over most part of Asia, Africa, through Persia, Arabia & Palistina, they completed the destruction w^{ch} the Goths began. Now;

The discovery of the mariners compass, & the art of printing banished this barbarism & gradually humanized the world. The multiplication of good books by the art of printing, and of paintings by the art of engraving, produced ^{such} a radiance of knowledge, as will probably secure the human race from those horrid shocks of barbarism, that once nearly laid waste the old world; unless indeed the ~~public~~ public taste madness of the times should produce a relish for poisoned food; and then it may become a question, whether the publications of morality, religion & on government, numerous as they are, will counter-bail the advantage w^{ch} Satan will derive from the art of printing? (See Dr A Brown's sketches)

It appears then from what has been said, that the mariners compass opened the Universe, and the art of Printing display'd it to an admiring world.

At this time superstition, and an odious ecclesiastical despotism received a fatal wound from the hand of Luther. Astronomical improvements, by discovering worlds beyond our own, expanded the human mind; so that when the christian religion began again to be taught in its pristine purity, as was the case at the reformation, the Universe seemed to extend itself to do it homage. Then did know ledge raise weeping Humanity from the dust, & pointed with her blazing torch the way to happiness & peace! Then did Religion, instead of daggers, racks & fetters, wear upon her graceful brow this everlasting motto, "My ways are ways of pleasantness, and all my paths are peace."

Liberty of the Press. Carr's strangers in France

The liberty of the press is the palladium of reason, the distributor of reason light & learning; the public & undismayed asserter of interdicted truth. It is the body & the honor guard of civil and political liberty. Where the laws halt with dread, the freedom of the press advances; it penetrates fortified recesses, and writes the fearful sentence on the wall of the pallace. As an American, as a descendant of Englishmen, (my expiring sigh) my last wish should ^{be} breathed for its preservation; but as an admirer of social harmony, regret to see its noble spirit engaged in the degrading service of fretful spleen &c -

It is a melancholy thing ~~to consider~~ to consider says Addison, that the art of printing, which might be the greatest blessing to mankind, should prove detrimental to us, and that it should be made use of to scatter prejudice & ignorance through a people, instead of conveying to them truth and knowledge. Spec. n^o 582. Vol. 8th -